IN THE CLAIMS

1. (Currently Amended) A solid oxide fuel cell ~~operating at a temperature in the range of 400-700°C~~, comprising~~;~~:

an anode including doped-ceria, wherein said doped-ceria is deposited by colloidal spray deposition;

an electrolyte including doped-ceria~~, based~~; and

a cathode including at least one cobalt iron based materials, ~~whereby the~~ wherein said fuel cell is capable of operating ~~operates~~ in the temperature range of 400-700°C.

2. (Currently Amended) The fuel cell of Claim 1, wherein said anode ~~is composed of~~ comprises NiO and doped-ceria.

3. (Currently Amended) The fuel cell of Claim 1, wherein said doped-ceria ~~includes~~ is doped with at least one dopants selected from the group consisting of samarium oxide, gadolinium oxide, yttria oxide, and lanthanide oxide.

4. (Currently Amended) The fuel cell of Claim 1, wherein said anode, said electrolyte, and said cathode are porous. ~~fuel cell includes pores created by a pore former.~~

5. Cancelled

6. (Currently Amended) The fuel cell of Claim 1, wherein said electrolyte comprises material selected from the group consisting of doped-ceria, doped-zirconia with a thin layer of doped-ceria, and a mixture of doped-ceria and doped-zirconia.

7. (Currently Amended) The fuel cell of Claim 1, wherein said ~~electrode~~ cathode is selected from the group consisting of (La, Sr)(Co, Fe) O_3, and (La, Ca) (Co, Fe, Mn)O_3.

8-10. Cancelled

11. (Currently Amended) The fuel cell of Claim 1, wherein the cathode ~~of the fuel cell comprises material composed of~~ comprises a cobalt, iron, manganese based material. ~~formed by colloidal spray deposition.~~

12. (Currently Amended) A ceria-based solid oxide fuel cell ~~including~~ comprising:

an anode containing doped-ceria, wherein said doped-ceria is deposited by colloidal spray deposition;

an electrolyte containing doped-ceria~~,~~;

an electrode containing cobalt iron based materials~~,~~; and

a fuel selected from the group consisting of hydrogen, methane, methanol, propane, butane and other hydrocarbons.

13. (Original) The fuel cell of Claim 12, operating in a temperature range of 400-700°C.

14. (Original) The fuel cell of Claim 12, wherein said fuel is composed of hydrogen or methane, and wherein the operating temperature is about 550°C.

15. (Currently Amended) The fuel cell of Claim 12, wherein said fuel is hydrogen, and said fuel cell has a power output of up to 400mW/cm^2 at an operating temperature of 550°C.

16. (Currently Amended) The fuel cell of Claim 12, wherein said fuel is methane, and said fuel cell has a power output of 320mW/cm^2 at an operating temperature of 500°C.

17. (Previously Amended) The fuel cell of Claim 12, wherein said anode comprises NiO and doped-ceria.

18. (Original) The fuel cell of Claim 17, wherein said electrolyte additionally includes doped-zirconia.

19. (Previously Amended) The fuel cell of Claim 18, wherein said electrode is ~~composed of (La, Sr)(Co, Fe) O_3~~ selected from the group consisting of (La, Sr) (Co, Fe)O_3 and (La, Ca) (Co, Fe, Mn) O_3.

20. (Original) The fuel cell of Claim 19, wherein said doped-ceria is doped with samarium oxide or gadolinium oxide.

Respectfully submitted,

Dated: Nov. 6, 2003 By: Ann M. Lee

Ann M. Lee
Registration No. 47,741

Lawrence Livermore National Lab
7000 East Avenue, L-703
Livermore, CA 94550

TEL: (925)422-6458

FAX: (925)423-2231